

Disclaimer: -

This product, and any other projects offered for sale in the future, are for experimental and hobby use only.

It is sold on the understanding that YOU the buyer must accept that it is sold "as-is", thus YOU must take responsibility for deciding on its suitability for the use that YOU intend to put it to.

In no event shall I be liable for any direct, indirect, punitive, incidental, special consequential damages, to property or life, whatsoever arising out of or connected with the use or misuse of my products.

OK.... So you now have one of these and need to set it up.



To start with you MUST have a suitable R/C Transmitter and Receiver. A suitable receiver is one that "failsafe's" on ALL Channels, not just the Throttle Channel OR outputs a NULL or Zero signal should it lose connection with the Transmitter.

I'd recommend a DSM2 or DSMX system.

The following receivers are suitable and output NULL on the channels used.

AR500 Failsafe

- Prevents unintentional electric motor response on start-up.
- Establishes low-throttle failsafe if the RF signal is lost.
- The AR500 removes servo output pulses to all channels except the throttle channel during failsafe.
- The AR500 throttle failsafe position is stored via the throttle stick position on the transmitter during binding.

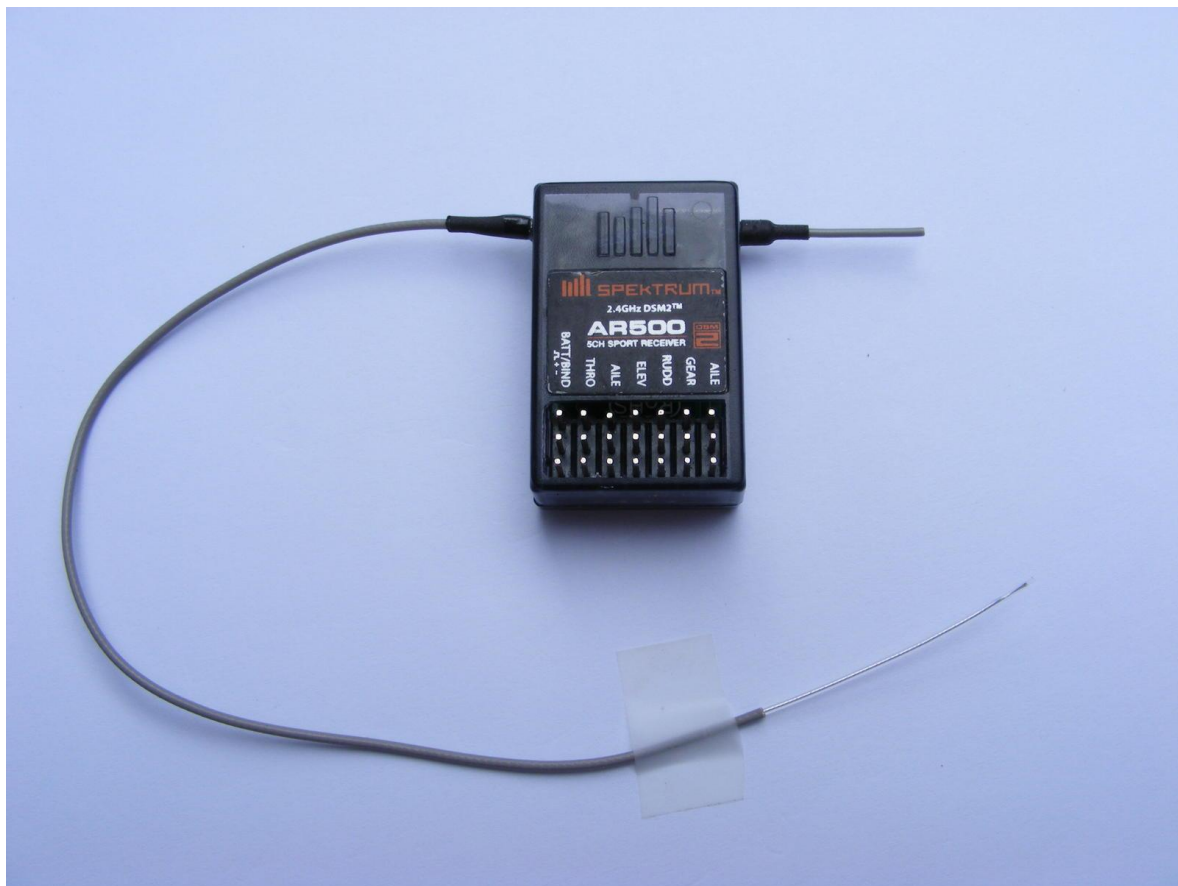
HOW AR500 FAILSAFE WORKS

Receiver Power Only

- When the receiver only is turned on (no transmitter signal is present), the throttle channel has no output—to avoid operating or arming the electronic speed control.
- All other channels will have no output signal.

These also have the same failsafe protocol.... AR600, AR610 & AR400.
....there may well be more.

AR500 Receiver.



FULL Pre-Set Failsafe is available on many high end receivers such as the AR 10000 and others, and this IS suitable, but must be correctly set to go to neutral on signal loss.

The SmartSafe Failsafe is however TOTALLY UNSUITABLE as used on some receivers.

SmartSafe Failsafe

The AR6210 features SmartSafe failsafe. SmartSafe is ideal for most types of aircraft.

With SmartSafe

when signal is lost the throttle channel only is driven to its preset failsafe position (normally low throttle) **while all other channels hold last command.**

- Prevents unintentional electric motor response on start-up.
- Eliminates the possibility of over-driving servos on start-up by storing preset failsafe positions.
- Establishes low-throttle failsafe and maintains last-commanded control surface position if the RF signal is lost.

Receiver Power Only

- When the receiver only is turned on (no transmitter signal is present), the throttle channel has no output, to avoid operating or arming the electronic speed control.

- All other channels are driven to their preset failsafe positions set during binding.

Note: Some analog servos may coast slightly even though no signal is present. This is normal.

After Connection

- When the transmitter is turned on and after the receiver connects to the transmitter, normal control of all channels occurs.

- After the system makes a connection, if loss of signal occurs SmartSafe drives the throttle servo

only to its preset failsafe position (low throttle) that was set during binding.

- **All other channels hold their last commanded position.** When the signal is regained, the system immediately (less than 4ms) regains control.

The SmartSafe system mentioned above will continue to drive the wheelchair at the last signal command, if that happens to be fast forward then it will continue fast forward till the signal is regained. That is bad!

I WOULD STRONGLY ADVISE THAT THE CHAIR HAS ITS WHEELS RAISED OFF THE GROUND DURING THE FITTING OF THIS DEVICE.

Step one is to make sure that the OMNI's "sleep" function is turned ON, as this

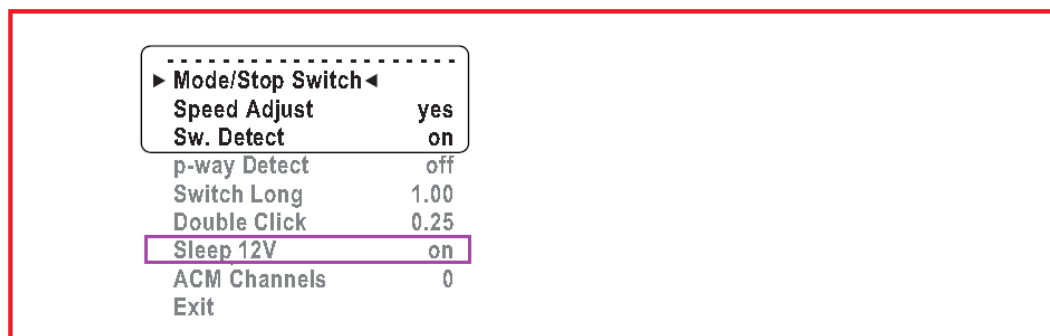
12v powers the interface and R/C receiver.

So.... Find **Sleep 12v** in the OMNI's menu and make sure that it is **ON**.

Here's a snapshot from the Omni manual to help.

9.1.2 Configuration I

This menu area contains general configuration parameters. The screen as below will appear.



9.1.2.7 Sleep 12V

Depressing the Select button while this option is highlighted configures the Omni+ Module as to whether the 12V supply on the 9-way D-type connector is present when the module is "asleep". The settings are On and Off.

On

Means the 12V supply will always be present. This should be set if the input device requires a 12V supply to "wake up" the Omni+ Module.

Off

Means the 12V supply will be removed when the Omni+ Module is "asleep". This can be set to reduce control system power consumption.

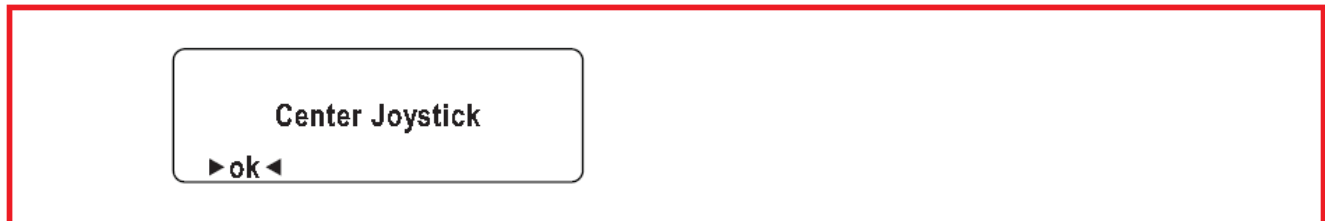
Once this is done you can connect up the Receiver to the interface and plug the DB9 into the OMNI and also plug the **power leads** (Pos & Neg) from the interface into the R/C receiver, this will cause the interface & receiver to power up in a failsafe mode with both LED's flashing.

At this point also select the Omni's joystick calibration screen....

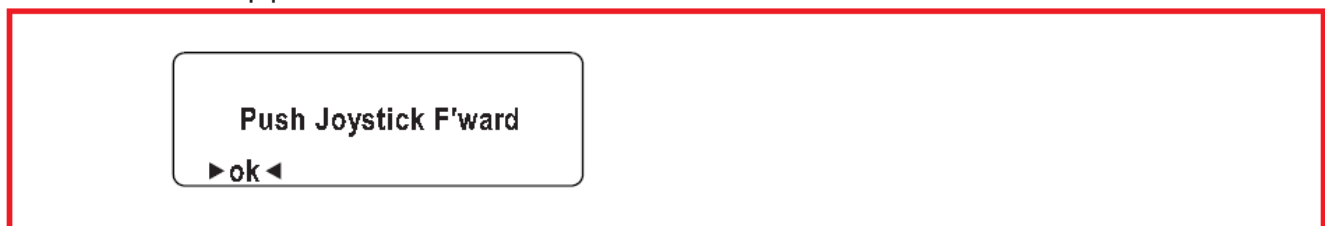
6.1.1 Joystick calibration

Each time a new joystick type input device is connected to the Omni+ Module, the system should be calibrated. To enter joystick calibration mode, switch the Omni+ Module on while depressing the Select button. After the normal power-up message, the joystick calibration screen will be entered. At this point simply follow the instructions on the screen and depress the Select button to accept the instruction.

Example: The first instruction is to center the joystick. The screen will appear as below.



Ensure the joystick is in the center position then depress the Select button. The next instruction will appear as shown on the screen below.



Deflect the joystick to the full forward position, hold it there and depress the Select button. The next instruction will appear etc.

You will want to use it AFTER completing the installation but doing this NOW ***should*** inhibit/prevent any possibility of the chairs wheels turning.

You may now need to follow the instructions for setting up & binding together the R/C Transmitter & Receiver.

Setting up of the R/C Transmitter & Receiver is your responsibility and the setting up of it has nothing whatsoever to do with this interface.... as at this point it is just supplying power for the Receiver .

Other than instructing you to have **ALL the R/C Transmitter channels set on Normal.**

I will of course attempt to help.... but ultimately the RC Transmitter and Receiver isn't my problem.

Right let's move on to attaching the signal wires and calibration.

Step2

Plugging in the Rudder Elevator and Aileron signal wires from the interface to the R/C receiver.....

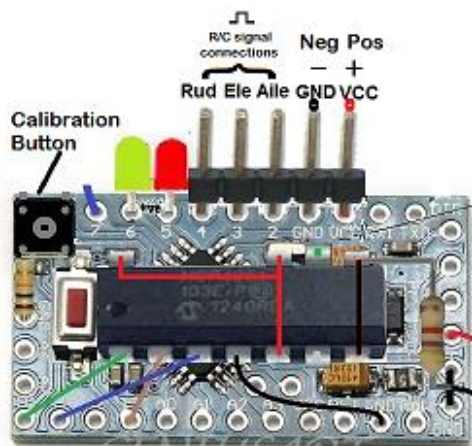
Refer to the pictures shown below of the AR500 .

Negative of Interface to **Negative** of Receiver ...ALL of the pins in the right hand vertical column are Negative

Positive of Interface to **Positive** of ReceiverALL of the pins in the middle vertical column are Positive

The signal pins are in the left hand vertical column marked  and are individual.

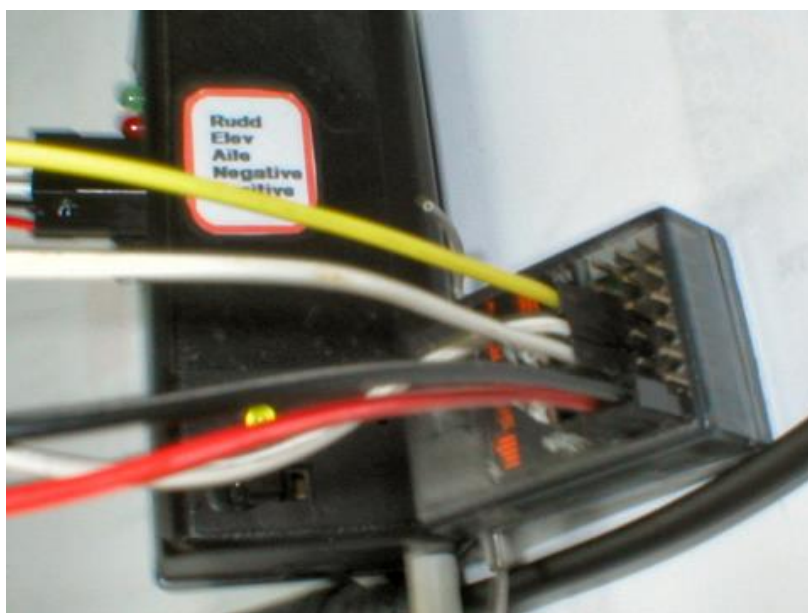
A SINGLE SIGNAL WIRE from **Rudder Elevator** and **Aileron** of the Interface to those on the R/C receiver similarly marked



Each horizontal row of three pins consists of a  Signal pin a Positive pin and a Negative pin.   Signal Pos Neg

So ...you simply need a Positive & Negative to power the receiver and 3 signal wires... Rud Ele & Aile.

Rud is the ON/OFF channel
Ele for Moving Forward / Reverse Green led
Aile for Steering Left/Right Red led



..(other receivers may vary but this pin configuration is most common.)

Calibrating:- Remember the recommendation that the chairs wheels are OFF the floor.

Calibrating the R/C signal to the interface is done by pressing the calibration button -- you'll find this button when you take the top off the interface box.

Simply undo the small cross head screw and slide the top off.

You will see the calibration button in the corner close to the Green LED.

So... it's OMNI with the SLEEP set to ON....

Interface plugged into OMNI...

R/C Receiver wires from / to the Interface...

Transmitter ON & joysticks in **NEUTRAL**

and the Top is removed from the interface.

Yes? OK ... Now simply press the calibration button.



Then immediately move the R/C joysticks from neutral to their extremes in the horizontal and vertical planes.

... Both LED's will randomly flash during this operation and you have 15 seconds to complete the calibration.

Once calibration is complete BOTH led's will turn off.

The led's will now light when you deflect the R.H. stick away from neutral and they simply give an indication that a signal is being received and also being output....

(Don't worry if you make a mistake or aren't satisfied that it went right. Calibration can be repeated as often as you wish.)

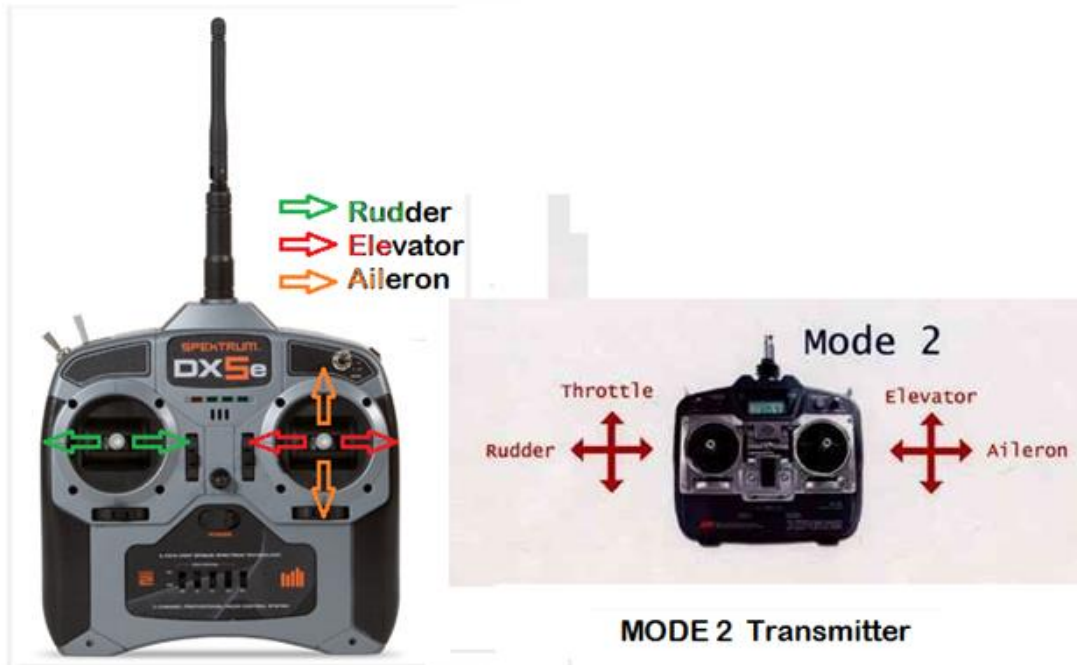
You can now use the OMNI's Joystick Calibration routine.... and if this succeeds the installation should be complete.

FAILSAFE indication:-

NO signal or LOSS of signal ... (Transmitter turned off or wire pulled out) ... will result in a **failsafe** condition this is indicated by BOTH led's flashing.

In this case a NEUTRAL signal is produced by the interface and the chair will not move via R/C until the signal is regained.

I use what is called a MODE 2 Transmitter with the the Throttle on the left... SEE BELOW



I am expecting / hoping that your using the above MODE 2.

No?MODE 1 ... Oh heck! READ CAREFULLY.



MODE 1 has the Throttle and Aileron on the RIGHT stick and Elevator and Rudder are on the LEFT ..thus it's use to drive the chair means that you will utilise the LEFT stick ... so this will require some simple wire swapping from the interface to the Receiver.

The Aileron signal wire FROM the interface box must plug onto the Rudder pin of the receiver.
The Rudder signal wire FROM the interface box must plug onto the Aileron pin of the receiver.